Catchment Management Plan for the Derbyshire Derwent Catchment

Introduction

Our water environment is important to our quality of life. We need to protect and enhance rivers and groundwater as systems which means thinking about them source to estuary and all the places in between. The Derbyshire catchment is very diverse and has a wide range of land types and land uses. From the moorlands to the densely populated urban areas, there are many pressures on the quality of the water environment. We want to transform this environment so it is better for people, better for wildlife and sustainable in the long term. This will take vision and co-ordinated action by the partnership.

1.0 Vision and Priorities

To create and protect a healthy and wildlife rich water environment within the Derbyshire Derwent Catchment, that will bring social, well-being and economic benefits to all.

This Plan is about action. Action to improve our rivers and action to raise awareness and educate people about the importance of rivers. To do this we need to:-

1. Adopt a collaborative approach to the development of interventions to protect and improve the catchment's urban and rural water environment.
2. Support community action and educational initiatives to improve the water environment and where appropriate support increased access to new and existing public footpaths and public open spaces.
3. Improve biodiversity within the catchment by habitat management and creation, and management of invasive non-native species.
4. Consider the impact of climate change such as flooding on the environment and ways to manage and mitigate this, particularly in the World Heritage Site Core and Buffer Zones.
5. Influence and support sustainable development in urban areas to deliver multiple benefits.
6. Find synergies with local economic objectives to bring multi benefits

The partnership has identified four themes:

Water Quality

Protect the water environment from sources of pollution and value and conserve it as an important natural resource.

Nature Conservation

Protect and enhance wildlife and promote biodiversity.

Climate Change

Promote interventions such as Natural Flood Risk Management to protect people and wildlife.

Engaging Communities

Promote engagement, volunteering, learning and access to the water environment

## 2.0 Data & Evidence to underpin a weight of evidence approach.

This catchment plan is based on a weight of evidence approach. The key sources of evidence which we have used to identify where we will work and what we will do are:

2.1 Nationally consistent evidence base

CaBA data package for our catchment: (Link to CaBA data package user guide) 'CaBA Data&GIS User Guide' explains which layers are available, what they mean and how they can be used. There are over 100 data layers available for this catchment which identify the spatial pattern of opportunities; issues, characteristics and the possible sources of the issues. This weight of evidence is being improved by collecting local datasets and working with local organisations in the catchment. This data coupled with 'Local Evidence' and 'Priority Places' below provide the weight of evidence required to deliver projects which will benefit the lives of people and wildlife living in this the catchment.

2.2 Local Evidence

The partnership has developed a GIS online interactive website (link to Interactive Map). This provides easy to access data that can be used to support project development and monitoring. It contains not only evidence, but the 'working with others' tab has all the catchment projects from conceptual to completed. It is also possible to use the 'enter a new' project tab to add new ideas or existing projects.
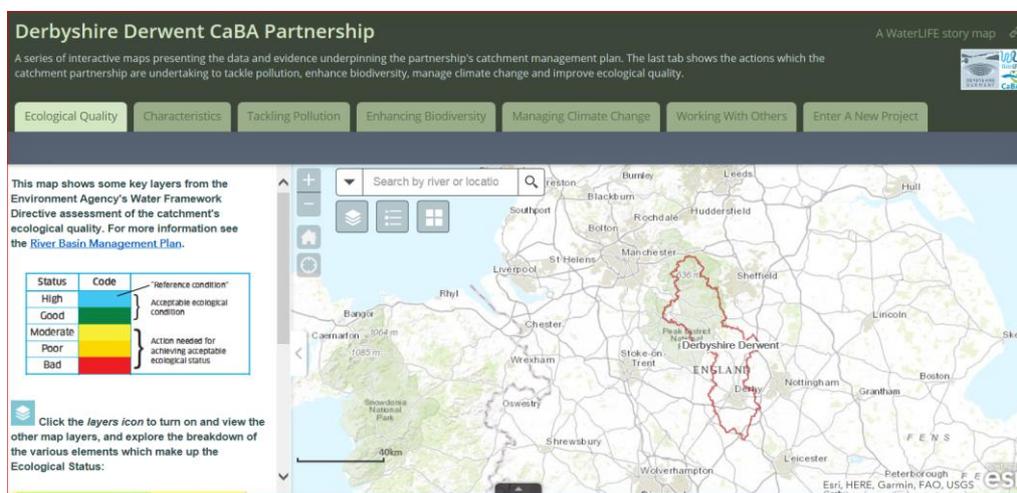
2.3 Priority places

A number of key CaBA organisations are prioritising where they will undertake actions (link to Strategies for catchment partners) to meet their particular aims, and these actions can potentially impact on other aspects of the water environment. We have used the following resources to help the partnership focus delivery where it will bring the greatest benefit:

Catchment Data Explorer (Link to Catchment Data Explorer): This is central to the CaBA planning process and we have used it to help identify where the issues are and the likely causes.

Catchment Flood Management Plan (Link to Catchment Flood Management plans): We have used this to check planned actions for reducing flood risk in this catchment in order to identify opportunities to create multi-benefit actions, and to identify opportunities to add flood risk benefits to other planned projects.

Countryside Stewardship Statements of Priorities (Link to Countryside Stewardship Statements of Priorities): We can use this to identify where Natural England has identified water quality or flooding as a priority issue for allocation of countryside stewardship grants.

Local Authority spatial plan ([Link to Derby City Local Plan](#)**;** [Amber Valley Local Plan](#);
[Bolsover Local Plan](#); [Derbyshire Dales Local Plan](#); [Highpeak local Plan](#); [NE Derbyshire Local Plan](#); [South Derbyshire Local Plan](#)**).** These can be used to identify where green infrastructure measures could be targeted and funded from infrastructure levy, to provide flood risk, water quality, biodiversity and recreational benefits.

Water company asset management plan: These can be used to understand where the priorities are for the water company and identify opportunities for partnership working.

There are many organisations looking to prioritise where they spend money and undertake actions to provide the best outcome for their particular objectives. The best way to make use of these different prioritisation tools and plans is to use them in combination to identify areas of the catchment, and possible projects, which will provide benefits to multiple partners, as this will provide a strong business case for future funding bids.

3.0 Delivery or project plan.

3.1 What are we currently doing in the catchment?

Below are a selection of on-going projects in the Catchment.

1: Moors for the Future is a large programme of works, predominantly aiming to protect and restore the upland peat in the Peak District and South Pennine area, while promoting responsible use and informing and educating society about its importance.

 2: The Severn Trent Water STEPS scheme provides grants to farmers for infrastructure investments and management schemes to aid the protection of our environment.

3: '**The River Starts Here'** project is working to improve two of Derbyshire and Nottinghamshire's most polluted and degraded river tributaries – Alfreton Brook and Oakerthorpe Brook, which flow through the former coal mining area. Data and evidence are used to identify issues, habitat improvement projects are carried out and community and businesses involved in improving water quality, habitat and enjoyment of the brooks.

4: **The Mercaston and Markeaton Brooks (MMB) project** has undertaken investigations and worked with farmers and landowners to improve farming practices which help protect water quality. We have installed in the project area fences and cattle drinking areas to reduce the cattle poaching and discharges of phosphate to the brooks.

 5: The Amber farming project focuses on rural diffuse pollution management through new farm infrastructure such as fencing and cattle drinking areas. There will be other projects to deliver new habitats such as wetlands with a strong community engagement component.

3.2 What flagship projects are we planning to do which are supported by the Evidence?

1: Catchment Scale Woodland Creation and land cover change. This will help identify strategic areas for woodland creation which will benefit a range of water related issues, such as improving water quality and natural flood management (NFM) interventions. When areas have been identified the next stage will be to identify the range and scale of possible interventions, as well as recognising and managing constraints to woodland creation.

- Collate data
- Identify locations
- Apply for funding
- Install suitable interventions

Benefits themes: **Water Quality, Climate Change, Water resources, Biodiversity**

2: **Derby Urban project**. The project aims to improve the quality of life in the Derby urban area by using environmental improvements to regenerate areas and re-engage communities with their water environment. Managing flood risk is also a driver for a number of sub-projects, however these projects will be designed to provide a range of multi-benefits.

The project will be made up of many smaller projects:

- De-culverting of Cuttle Brook and Burley Brook.
- Wilmore Road rain garden
- Markeaton Brook improvements
- Crayfish project on Markeaton
- Natural Flood Management on Markeaton Brook
- Misconnection campaign
- Engaging businesses in pollution prevention activities
- School engagement including SUDS for Schools
- Community events and engagement

Benefits themes: **Water Resources, Nature Conservation, Climate Change, Engaging Communities**

3: Bottle Brook. This project aims to improve this small but important tributary of the Derwent for people and wildlife. There is already good engagement with local volunteer organisations and businesses. This could support projects delivering water quality, Natural Flood Management and biodiversity improvements.

- Surveying of wildlife sites
- 2/3 Natural Flood Management projects
- Fish pass and fish management improvements

- Citizen science – Riverfly or similar
- Volunteer days from local businesses
- Improvements to existing local art along the river through planning gain
- Local engagement events such as stalls at local 'shows'

Benefits themes: **Water Resources, Nature conservation, Climate Change, Engaging Communities**

4: White Peak aims to improve the environment and deliver a heritage and wildlife rich White Peak landscape that provides a wide range of public goods and services.

Objectives

- Address the environmental priorities of the White Peak Rivers of the Dove, Manifold, Hamps, Noe, Lathkill, Bradford, Wye and Derwent their tributaries and habitats
- Identify best practice land management and set up a small number of farming for wildlife demonstration projects, with a larger number of farms adopting aspects of best practice and all farms receiving some form of advice and guidance.

Priority actions

- Restoring, improving and creating river habitats
- Preventing diffuse agricultural and rural pollution
- Improving water body and / or element status
- Reducing flood risk by measures at a landscape scale
- Managing invasive non-native species
- Conserving priority species

Benefits themes: **Water Resources, Nature conservation, Climate Change, Engaging Communities**

5: Water voles. This project will initially focus on citizen science to collect information on water voles in the Derbyshire Derwent and identify threats and opportunities within the catchment. We will then develop risk and opportunity maps which will help the targeting of measures to reduce predation and improve habitat for water voles throughout the catchment.

Benefits themes: **Nature conservation, Climate Change, Engaging Communities**

6: Transforming the Trent Valley Landscape Partnership. This project will undertake a wide range of environmental, cultural and community-led projects within the Trent, Tame and Dove river valleys covering some 190 square kilometres. Work over the next 18 months will help to shape and define a range of projects. Projects will include:

- Creating a more robust and attractive landscape for local people and for visiting tourists to enjoy with access to sites of wildlife and cultural interest.
- Revealing the archaeological and industrial heritage that has shaped the river valley landscape.
- Restoring characteristic river valley landscape features such as meandering river channels, water meadows and waterside trees.
- Creating new and improved wildlife habitats such as reed beds, wet pastures and woodland encouraging species such as bittern, osprey and waders on land formerly quarried for sand and gravel.
- Improving accessibility on foot, cycle and horseback with new opportunities for recreation and sport.

Benefits themes: **Water Resources, Nature conservation, Climate Change, Engaging Communities**

7: Amber catchment. This project will undertake a wide range of environmental and community-led projects within the Amber catchment. Projects will include:

- Working with landowners on riparian improvements, cattle drinking areas and habitat restoration, including restoring aspects of the broader catchment, by creating natural ponds, wetlands, floodplain grazing marsh and/or wet woodland where possible.
- Working in the urban areas to improve water quality, habitat and people's enjoyment of their river environment.
- Re-meandering the river channel and restoring river banks.
- Invasive species removal and control.
- River and water quality community and education programmes.
- Assessment of barriers to fish passage, with removal of weirs and installation of fish passes where appropriate.

Benefits themes: **Climate Change, Water resources, Biodiversity, Nature conservation, Engaging Communities**

8: Derbyshire Weirs and Fish Passage. Aims to improve the knowledge and understanding of Derbyshire weirs, their impacts and implement measures to improve fish passage.
Projects will include:
- To understand heritage, cultural ecology and recreational value of The Derbyshire Derwent, its weirs and major tributaries.
- To develop understanding of the ecological impacts the weirs on species distributions and abundance, particularly those of protected status, e.g. salmon, eel and brook lamprey.
- To develop plans and implement fish passage for all species for the Derbyshire Derwent catchment. Review all structures along the river, ascertain ownership and share our plans with them. Prioritise rivers and structures for passage, for deliverability and opportunity (cost/benefit and difficulty). Develop a vision and strategy. Build a partnership and deliver

public information and engagement. Consider socio economic value of fish passage, how it links to all existing project working and their funding streams.

Benefits themes: **Climate Change, Water resources, Biodiversity, Nature conservation, Engaging Communities**

9. Ecclesbourne catchment. This project will primarily work with farmers and landowners in the catchment to improve water quality. Projects will include:

- Working with landowners to restrict livestock access to watercourses by installing cattle drinking areas, pumps and buffer strips.
- Habitat restoration, including restoring aspects of the broader catchment, by creating natural ponds, wetlands, floodplain grazing marsh and/or wet woodland where possible.
- Invasive species removal and control, piloting the use of rust fungus on Himalayan balsam along with other measures to reduce its spread.

- *Benefits themes:* **Climate Change, Water resources, Biodiversity, Nature conservation, Engaging Communities**

4.0 Monitoring and evaluation.

Catchment Management has to adapt as we improve our understanding because we cannot predict with certainty what the impact of our changing environment and the delivery of projects in this plan will be. The monitoring plan for this catchment is in development.

5.0 Work in progress.

This plan is work in progress and will grow and adapt as we deliver projects to improve the catchment and as new threats, like climate change, emerge. The greater the collaboration between

CaBA partners the more sustainable this plan will become and the greater the benefits to the catchment and the people and wildlife that live there.

Component of CaBA Plan	Initial	Growing	Sustainable
1) Vision and ToR	Yes	Yes	Yes
2) Data & Evidence	Yes	Yes	Yes
3) Project plan	Yes	Yes	No
4) Monitoring plan	Yes	Yes	No

Annexes for Catchment Management Plan

Annex 1.1 Example catchment Visions (Case studies and guidance on engagement)

[Vision for the Wandle](#)

[Vision for the Soar](#)

Annex 1.2 Terms of Reference

Annex 2.1 National Data and Evidence Resources

GIS Training
http://theriverstrust.maps.arcgis.com/ includes introductory ArcGIS Online training resources and links to the Ecospatial Desktop GIS training site, with online training modules tailored for CaBA partnerships (request a login from info@catchmentbasedapproach.org). These training resources can help you get the most from the CaBA Data package, organise and manage data collected by your partnership, and share interactive maps with your partners and the public.

If you would be interested in a two day ArcGIS Online training course to show you how to develop a customised online mapping portal for your catchment, please let us know at info@catchmentbasedapproach.org, as we can only run a course if there is sufficient demand

Annex 2.2 Local Evidence tools and resources

Riverfly Partnership survey methodology, training and data management: http://www.riverflies.org/

Freshwater Watch water quality survey toolkit, training and data management: From Feb/March 2017, FreshwaterWatch CaBA groups will have the ability to brand their own landing page and display maps with just their own group results. https://freshwaterwatch.thewaterhub.org/

Modular River Survey – toolkit, training and data management for river habitat survey http://modularriversurvey.org/

River Obstacles app and data management for fish migration barrier assessment https://www.river-obstacles.org.uk/

Electrofishing database from the Scottish Fisheries Coordination Centre for data recording and reporting (available to UK organisations for annual subscription) https://www.intrelate.com/sfcc/home.asp

MyScimap: https://my.scimap.org.uk A free online version of the sediment risk mapping tool.

Farmscoper: http://www.adas.uk/Service/farmscoper Decision support tool for agricultural pollution management planning

Annex 2.3 Priority Places Resources

Environment Agency data sharing platforms

http://environment.data.gov.uk/index.html This site gives access to the Catchment Data Explorer; Bathing Water Explorer, Flood Data APIs and Water Quality Archive (OpenWIMS) .

http://environment.data.gov.uk/ds/partners This is the partner data catalogue, where EA's partner organisations can register for an account to access more detailed datasets, which are not publicly available elsewhere. These include detailed Ordnance Survey mapping (including 1:25k, VectorMap Local and Mastermap), LIDAR, Aerial photography, and Flood Risk datasets.

http://environment.data.gov.uk/ds/catalogue This is the public Spatial Data Catalogue (replacing Geostore), where you can download a wide range of environmental data from EA and other government partners. You can also find web service URLs, which enable you to view the data in GIS software live via the internet, meaning you don't need to download and store large datasets.

Other data sharing platforms

Ecosystem Services Visualisation: http://bit.ly/ESVisManual A guidance manual for identifying priority areas in catchments, where interventions to improve the water environment are likely to provide multiple benefits to a range of partner organisations and local communities.

EcosystemsKnoweldgeNet Tool Assessor: http://ecosystemsknowledge.net/resources/tools/tool-assessor A summary of spatial prioritisation tools which can help to target actions based on the benefits of natural capital and ecosystem services.

Annex 3.1 List of projects

A list of projects to deliver improved flood management are identified in the Flood management reports, https://www.gov.uk/government/collections/flood-risk-management-plans-frmps-2015-to-2021 , part C. The Environment Agency plan to release a shapefile of planned projects.

WFD projects. There are a number of different formats and approaches developing across the Environment Agency to share a list of WFD priority projects. The best way to access these is via your catchment co-ordinator.

Annex 3.2 Online Project database

EA have developed an online GeoForm for collecting project mandate information: http://environment.maps.arcgis.com/apps/GeoForm/index.html?appid=33bddfe1e81b49ec98dfcd09f236284e

Or you could d copy the simpler project template from one of these catchment partnerships:

Derbyshire Derwent: https://derbyshirewt.maps.arcgis.com/home/item.html?id=ef57a83f2f1d40cd9c50668784af8078

Mersey:
http://hwt.maps.arcgis.com/home/item.html?id=2c7a613a986c4dbc87508fac4afde6de

Annex 3.3 ArcGIS Online template for sharing project plan

These examples show how the online projects database can be incorporated in to an ArcGIS Online catchment plan:

Derbyshire Derwent:
https://derbyshirewt.maps.arcgis.com/home/item.html?id=ef57a83f2f1d40cd9c50668784af8078

Mersey catchments:
http://hwt.maps.arcgis.com/home/item.html?id=2c7a613a986c4dbc87508fac4afde6de

Annex 4.1a PRAGMO monitoring plan (adapted)

Example Monitoring Plan template (based on PRAGMO)
http://www.catchmentbasedapproach.org/images/Docs/WaterQuality/monitoring_planner_v2.xls